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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/651,062	08/29/2003	Daigo Aoki	DAIN:578B	8988
25944	7590	11/01/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER KUGEL, TIMOTHY J	
			ART UNIT 1712	PAPER NUMBER

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/651,062	AOKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Timothy J. Kugel	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 17 January 2006 and 02 August 2006.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 50,52-56,63 and 65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 50,52-56,63 and 65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/789,748.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/12/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Claims 50, 52-56, 63 and 65 are pending as amended on 2 August 2006, claims 1-50, 51, 57-52, 64, 66 and 67 being cancelled.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Information Disclosure Statement***

3. The information disclosure statement submitted on 12 October 2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner has considered the information disclosure statement.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 USC 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 50, 52-56, 63 and 65 are rejected under 35 USC 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention.

Claim 50 recites the limitation "the layer is conductive"; however, this limitation is not disclosed in the original specification.

Further, claim 63 recites the limitation "a metal salt capable of facilitating charge-injection and/or charge-transfer"; however, this limitation is not disclosed in the original specification.

These are new matter situations.

***Claim Rejections - 35 USC § 103 and/or 35 USC § 103***

5. Applicant's amendment, filed 2 August 2006, with respect to requiring the wettability layer to have a thickness of 100 to 1,000 angstroms has been fully considered and overcomes the following:

Amended claims 50-55, 64 and 65 are rejected under 35 USC 102(b) as being anticipated by US Patent 6,294,313 (Kobayashi hereinafter).

The rejection of claims 50 and 52-55 under 35 U.S.C. 102(e) as being anticipated by US Patent 6,228,480 (Kimura hereinafter) has been withdrawn.

The rejection of claims 50, 52, 54-56, and 63 under 35 U.S.C. 102(b) as being anticipated by European Patent Application 0633064 (Murasawa hereinafter) has been withdrawn.

The rejection of claims 56 and 63 under 35 U.S.C. 103(a) as being unpatentable over US Patent 6,294,313 (Kobayashi hereinafter) in view of Murasawa has been withdrawn.

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6. Amended claims 50-55, 64 and 65 are rejected under 35 USC 103(a) as being unpatentable over Kobayashi.

Kobayashi teach a photoconductive (Column 1 Lines 39-56) wettability-changing layer not more than 10  $\mu\text{m}$  thick (Column 31 Lines 54-58) comprising a photocatalyst—including titanium dioxide (Column 13 Lines 33-40), an organosiloxane or fluoroalkyl polymer binder (Column 14 Line 12 – Column 18 Line 15), and a charge facilitator of metal salt as claimed (Column 18 Line 65 – Column 19 Line 10).

Kobayashi does not disclose expressly a layer thickness of between 100 and 1,000 angstroms; however, the claimed range is *prima facie* obvious since the thickness taught by Kobayashi fully embraces the claimed range.

Further, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to reduce the thickness of the layer, for the purpose of making the intended future device smaller, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering optimum or workable ranges involves only ordinary skill in the art (*In re Aller*, 105 USPQ 233).

### **Conclusion**

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Kugel whose telephone number is (571) 272-1460. The examiner can normally be reached 6:00 AM – 4:30 PM Monday - Thursday.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TJK  
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RANDY GULAKOWSKI  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700